**Unit 1 Review – Chemical Reactions**

**Chapter 4 - Developing Chemical Equations**

*I know how to use & distinguish between the following terms:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| ionic compounds | ions | cations | anions | valence electrons |
| binary ionic compounds | | polyatomic ions | ternary compound | molecules |
| molecular compound | | binary molecular compounds | | reactants |
| products | chemical reaction | | chemical equation | |
| coefficient |  |  |  | |
|  |  |  |  | |

*I know how to…*

\_\_ name binary ionic compounds (including with multivalent metals)

\_\_ write the chemical formula for binary ionic compounds (including with multivalent metals)

\_\_ name & determine the chemical formula for ternary ionic compounds with polyatomic ions

\_\_ name binary molecular compounds

\_\_ write the chemical formula for binary molecular compounds

\_\_ name other common molecular compounds (such as diatomic molecules)

\_\_ state the law of conservation of mass & apply it to chemical equations

\_\_ write word equations, skeleton equations, and balanced chemical equations for chemical reactions

\_\_ indicate the state of a substance in a chemical reaction [See Table 4.12, page 162]

**Chapter 5 - Classifying Chemical Reactions**

*I know how to use & distinguish between the following terms:*

|  |  |  |  |
| --- | --- | --- | --- |
| precipitate | synthesis reaction | | decomposition reaction |
| single displacement reaction | | activity series | double displacement reaction |

*I know how to…*

\_\_ identify synthesis & decomposition reactions and predict the products of the reactions

\_\_ describe applications of synthesis & decomposition reactions (e.g., synthesis of ammonia for

fertilizer, decomposition of TNT as an explosive, making of concrete, etc.)

\_\_ identify single & double displacement reactions and predict the products of the reactions

\_\_ use the activity series to predict the products of a single displacement reaction

\_\_ identify the products of complete & incomplete combustion of fossil fuels such as gasoline

**Chapter 6 - Acids and Bases**

*I know how to use & distinguish between the following terms:*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| acid | binary acids | oxoacids | bases | pH scale |
| pH indicator | neutralization | liming |  |  |

*I know how to…*

\_\_ describe the physical and chemical characteristics of acids

\_\_ name & determine the chemical formula of common binary acids and oxoacids [See Table 6.1,

page 222 & Table 6.2, page 223]

\_\_ describe the physical and chemical characteristics of bases

\_\_ name & determine the chemical formula of common bases [See Table 6.3, page 226]

\_\_ use the pH scale to identify if a substance is acidic, neutral, or basic and to compare relative

acidity of different substances

\_\_ give examples of common substances that are strong acids, weak acids, neutral, weak bases,

and strong bases [See Figure 6.8, page 230]

\_\_ use the colour range of pH indicators [See Figure 6.13, page 233] to determine the pH of a

substance; identify if a substance is acidic, basic, or neutral using blue and pink litmus paper

\_\_ give examples of natural pH indicators

\_\_ predict the products of a neutralization reaction

\_\_ describe examples of applications of neutralization (e.g., antacids, neutralizing acid spills, etc.)

\_\_ briefly describe the reactions involved in producing acid precipitation, and the effects of change

in pH on aquatic organisms (e.g., water birds, fish, etc.)